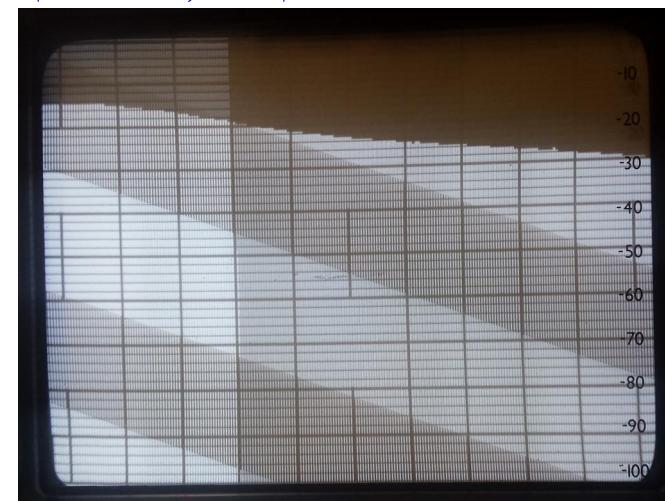
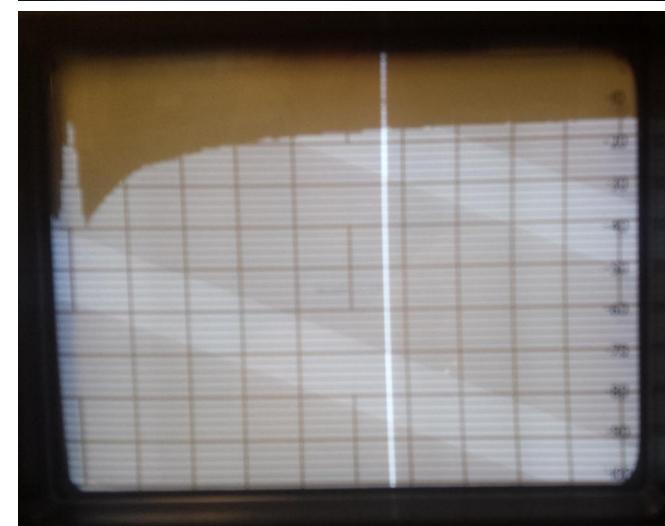


Spectrum analyzer output



0 Hz ... 50 kHz
Marker is at 30 kHz.

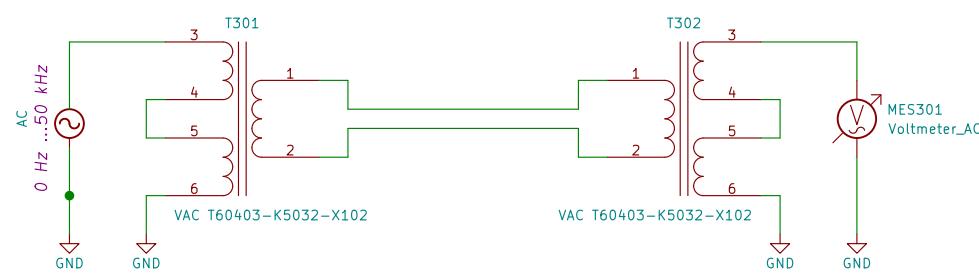


Sheet: /test_frequency-transfer_tl071_01/
File: test_frequency-transfer_tl071_01.sch

Title: Frequency transfer, TL071

Size: A4 Date: 2017-04-28
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Spectrum analyzer output



Sheet: /test_frequency-transfer_T60403-K5032-X102_01/
File: test_frequency-transfer_T60403-K5032-X102_01.sch

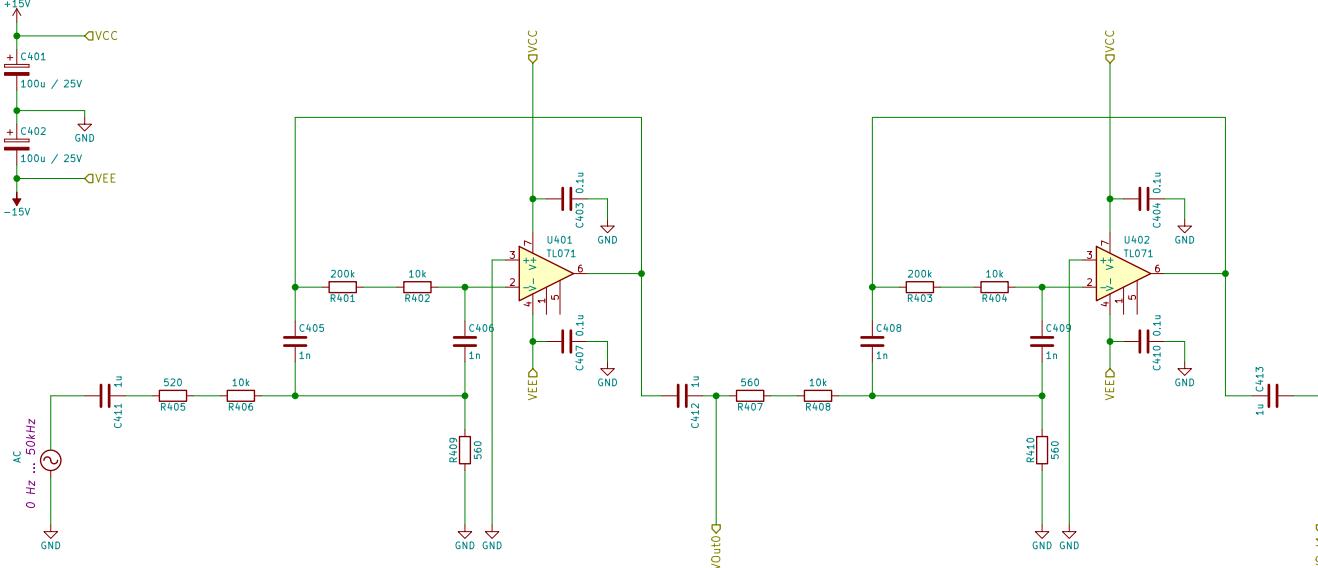
Title: Frequency transfer, transformer, VAC T60403-K5032-X102

Size: A4 Date: 2017-05-01

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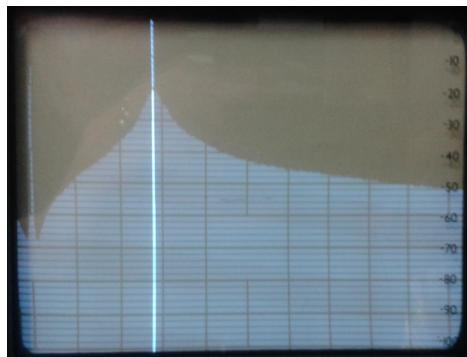
Two times cascaded:
15 kHz band pass, using a
modified Deliyannis filter
(Texas Instruments, SLOA093)

All resistors: E96 series
All capacitors: E24 series

VOut0

Spectrum analyzer output, 0 Hz ... 50 kHz.

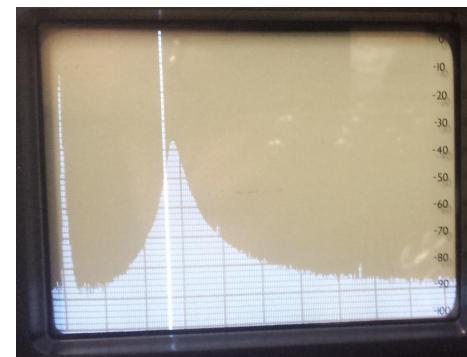
Marker is at 15 kHz.



VOut1

Spectrum analyzer output, 0 Hz ... 50 kHz.

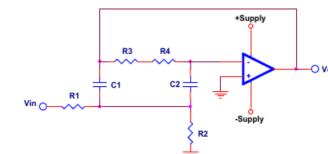
Marker is at -6dB point.



Components used do vary, so
in this experiment the filter is not
at its best performance.
Peak is at 14.4 kHz, -6dB points
are at 13.2 kHz and 15.8 kHz.
Total bandwidth is 2.6 kHz.

This result is satisfactory as we
can expect better performance
when we use better components.

Source data for
a single stage filter.



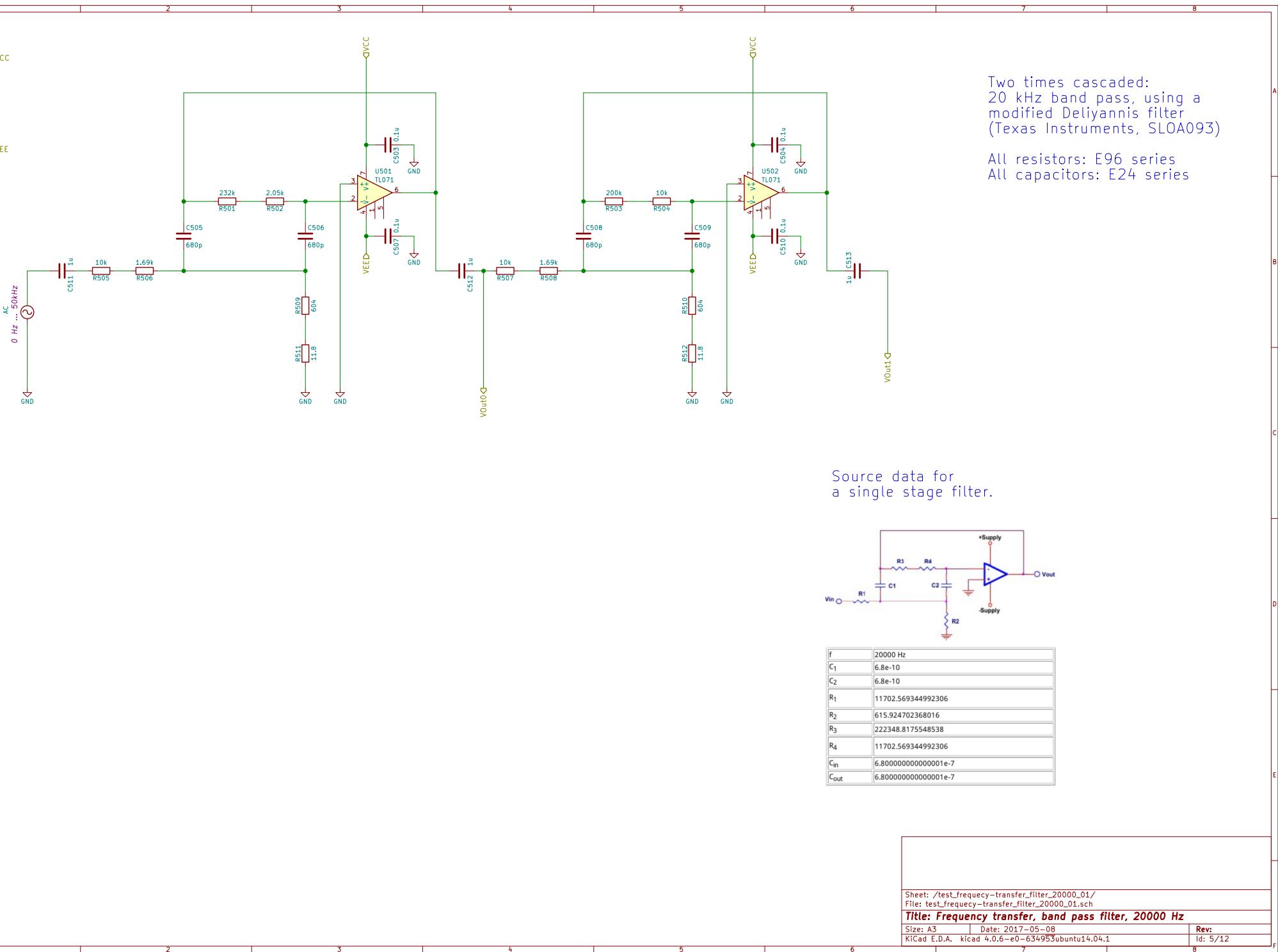
	Orig
f	15000 Hz
C1	1e-9
C2	1e-9
R1	10610.32953945969
R2	558.4383968136679
R3	201596.26124973412
R4	10610.32953945969
Cin	0.0000010000000000000002
Cout	0.0000010000000000000002

Final values for resistors R1: 10610 R2: 558 R3+R4: 212206
 10k 549 210k
 604 9.09 2.21k
 6.04

Sheet: /test_frequency-transfer_filter_15000_01/
File: test_frequency-transfer_filter_15000_01.sch

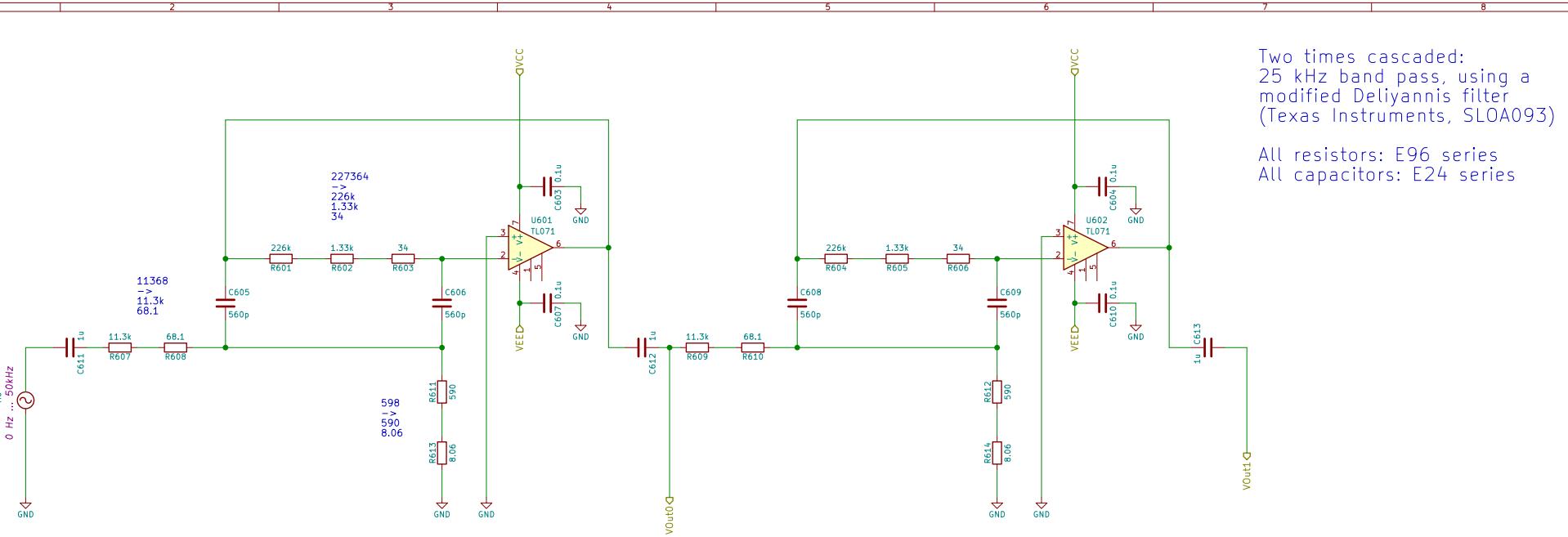
Title: Frequency transfer, band pass filter, 15000 Hz

Size: A3	Date: 2017-05-01	Rev:
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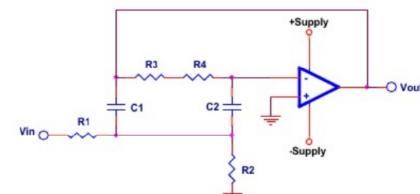


+15V
+C601
100u / 25V
GND
-15V

AC
0 Hz ... 50 kHz



Source data for
a single stage filter.

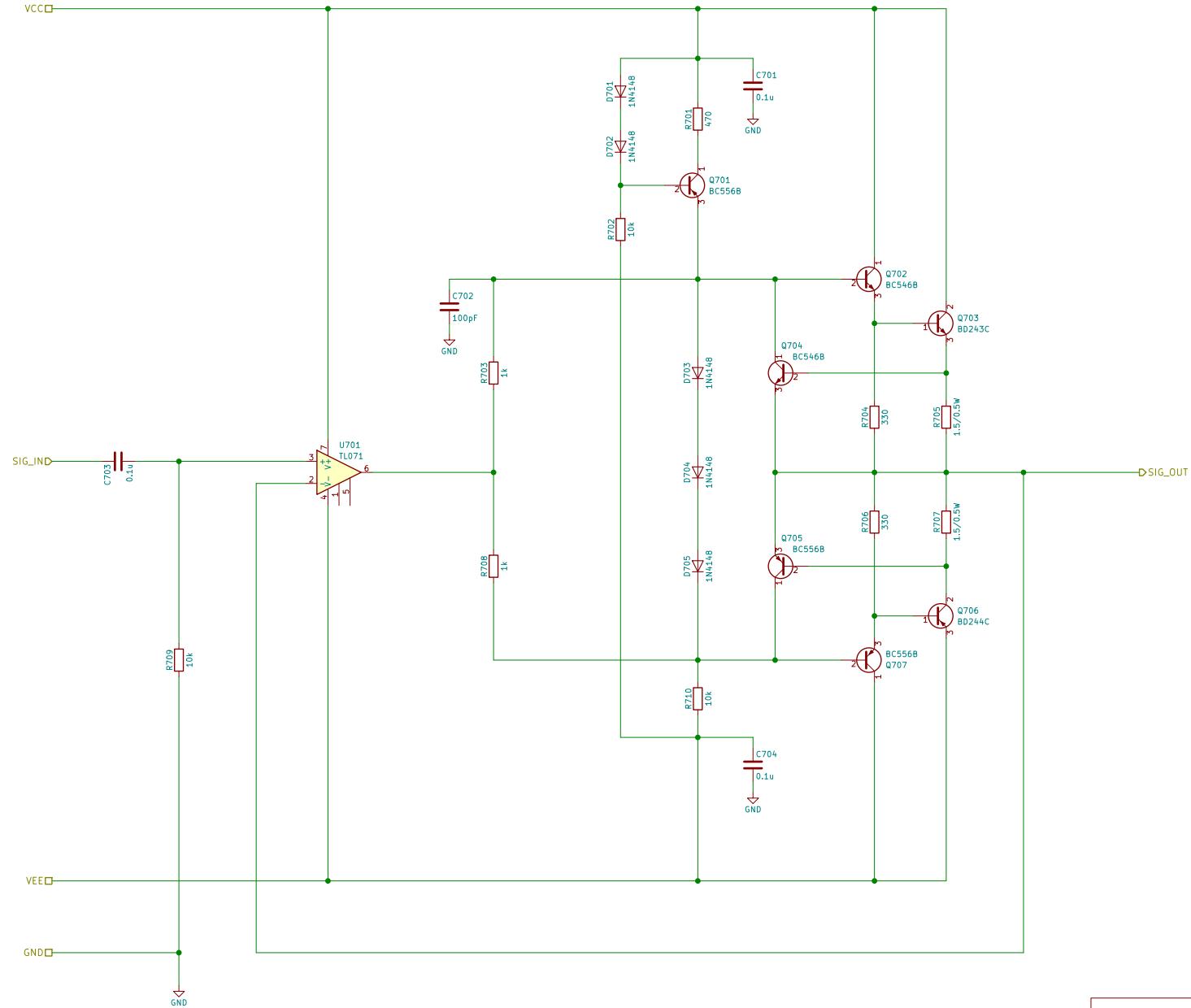


f	25000 Hz
C ₁	5.6e-10
C ₂	5.6e-10
R ₁	11368.210220849665
R ₂	598.3268537289298
R ₃	215995.99419614364
R ₄	11368.210220849665
C _{in}	5.6e-7
C _{out}	5.6e-7

Sheet: /test_frequency-transfer_filter_25000_01/
File: test_frequency-transfer_filter_25000_01.sch

Title: Frequency transfer, band pass filter, 25000 Hz

Size: A3	Date: 2017-05-09	Rev:
KiCad E.D.A. kicad 4.0.6-e0-634953ubuntu14.04.1		Id: 6/12

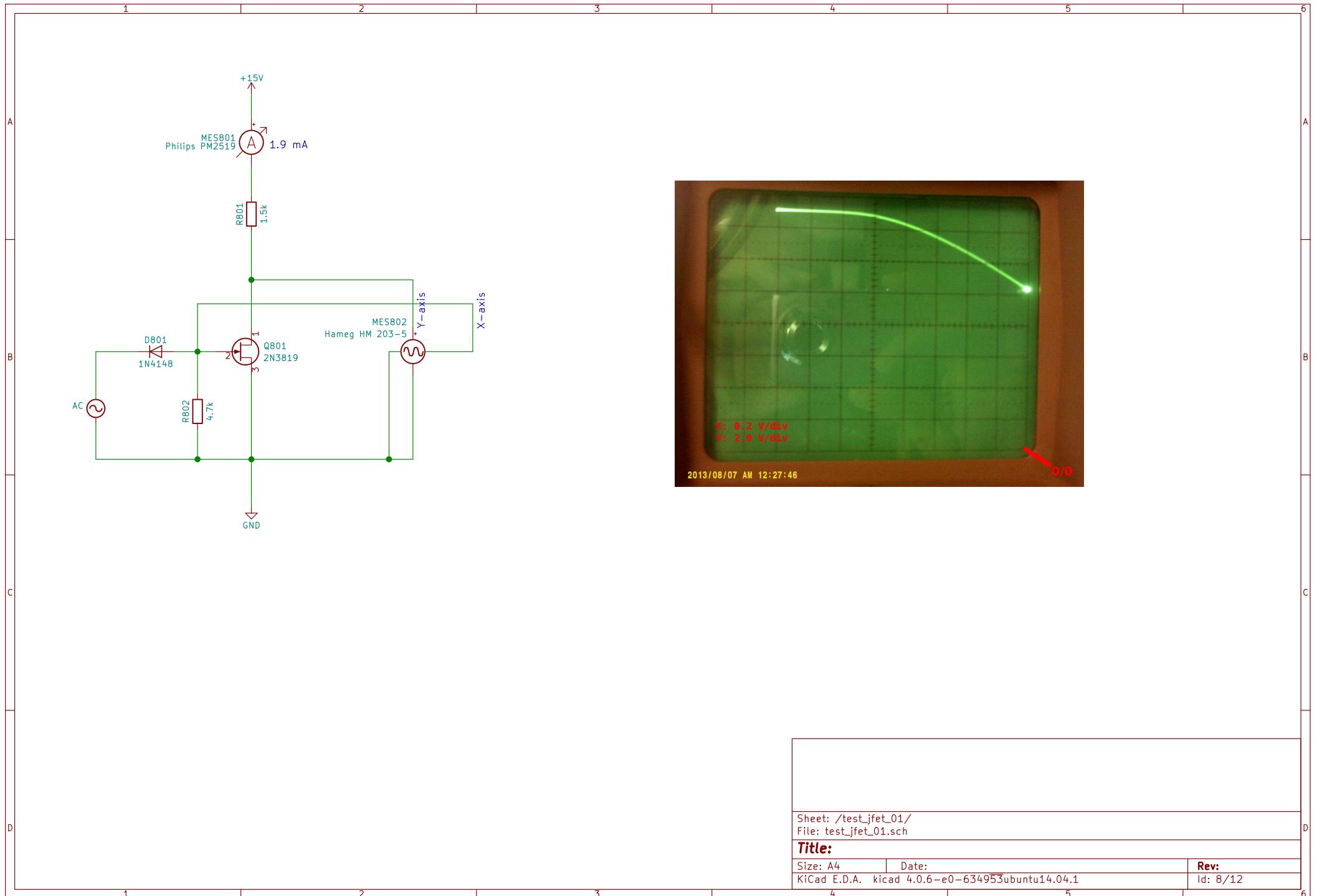


Sheet: /test_50kHz_power-amp/
File: test_50kHz_power-amp.sch

Title:

Size: A3	Date: 2017-06-01	Rev:
KiCad E.D.A. kicad 4.0.6-e0-634953ubuntu14.04.1		Id: 7/12

1 2 3 4 5 6



A

A

B

B

C

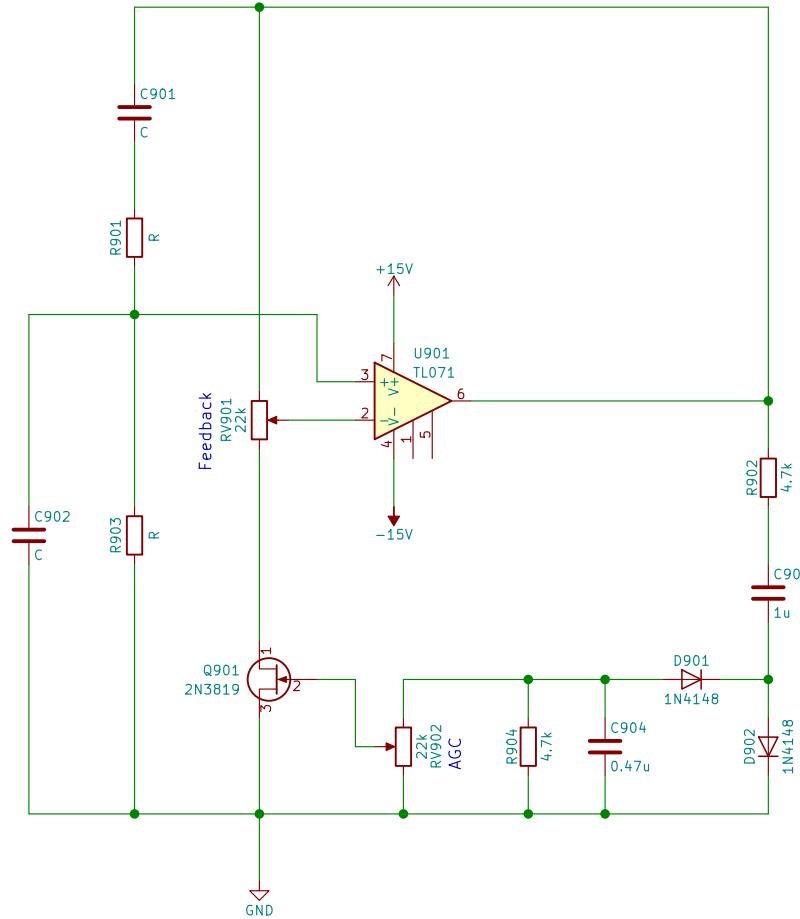
C

D

D

Values for wien bridge, R and C, by frequency:

15000Hz: C=8.20e-09, R= 1294, R(E24)= 1300 ($\Delta= 6[0.5\%]$)
 20000Hz: C=1.00e-09, R= 7958, R(E24)= 8200 ($\Delta= 242[3.0\%]$)
 25000Hz: C=2.35e-09, R= 2653, R(E24)= 2700 ($\Delta= 47[1.8\%]$)
 50000Hz: C=4.70e-09, R= 677, R(E24)= 680 ($\Delta= 3[0.4\%]$)

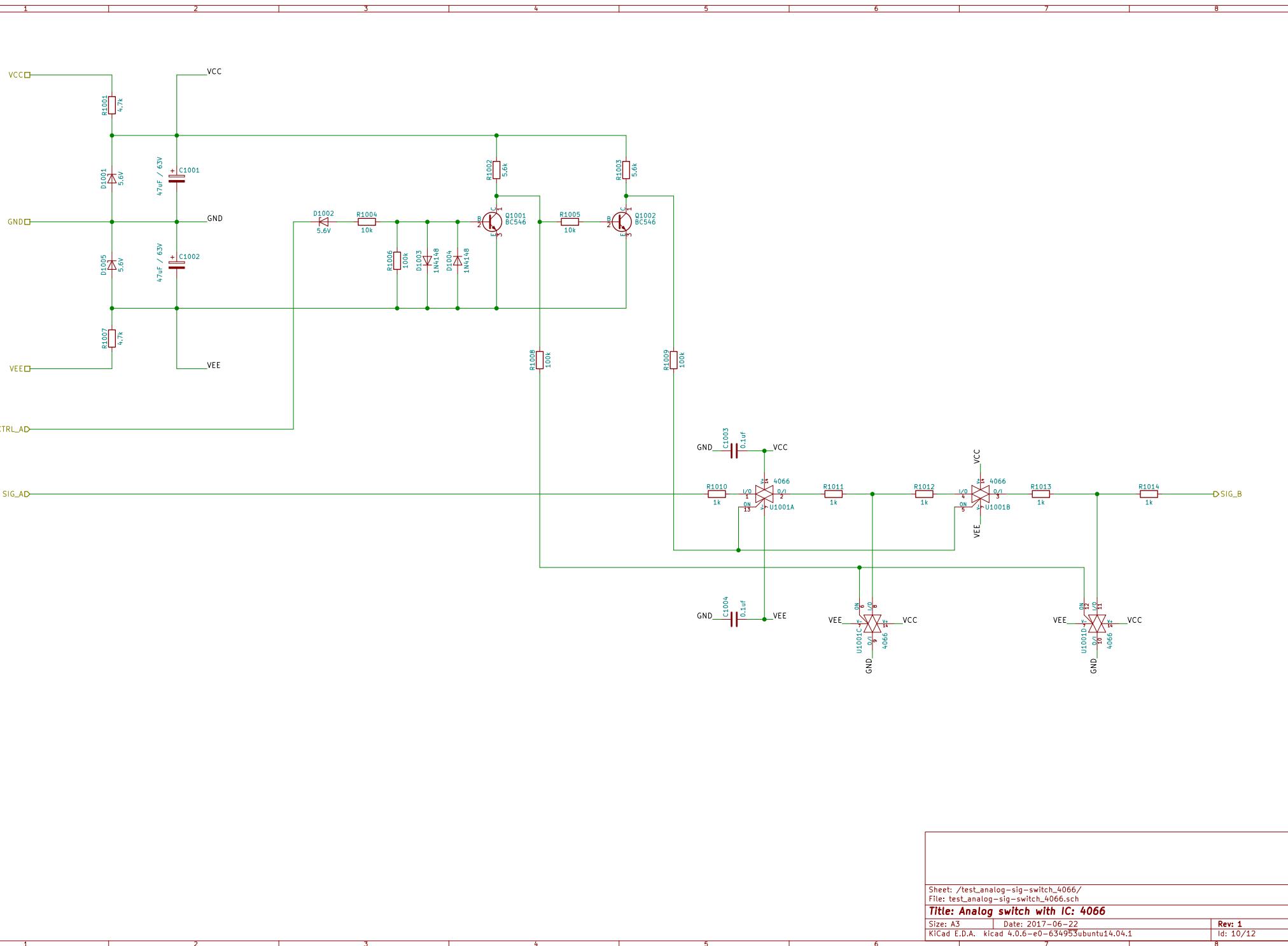


Sheet: /test_wien-bridge-osc_fet-agc_15000-20000-25000/
 File: test_wien-bridge-osc_fet-agc.sch

Title: AGC stabilized Wien bridge oscillator: 15000Hz, 20000Hz, 25000Hz

Size: A4 Date: 2017-06-16
 KiCad E.D.A. kicad 4.0.6-e0-634953ubuntu14.04.1

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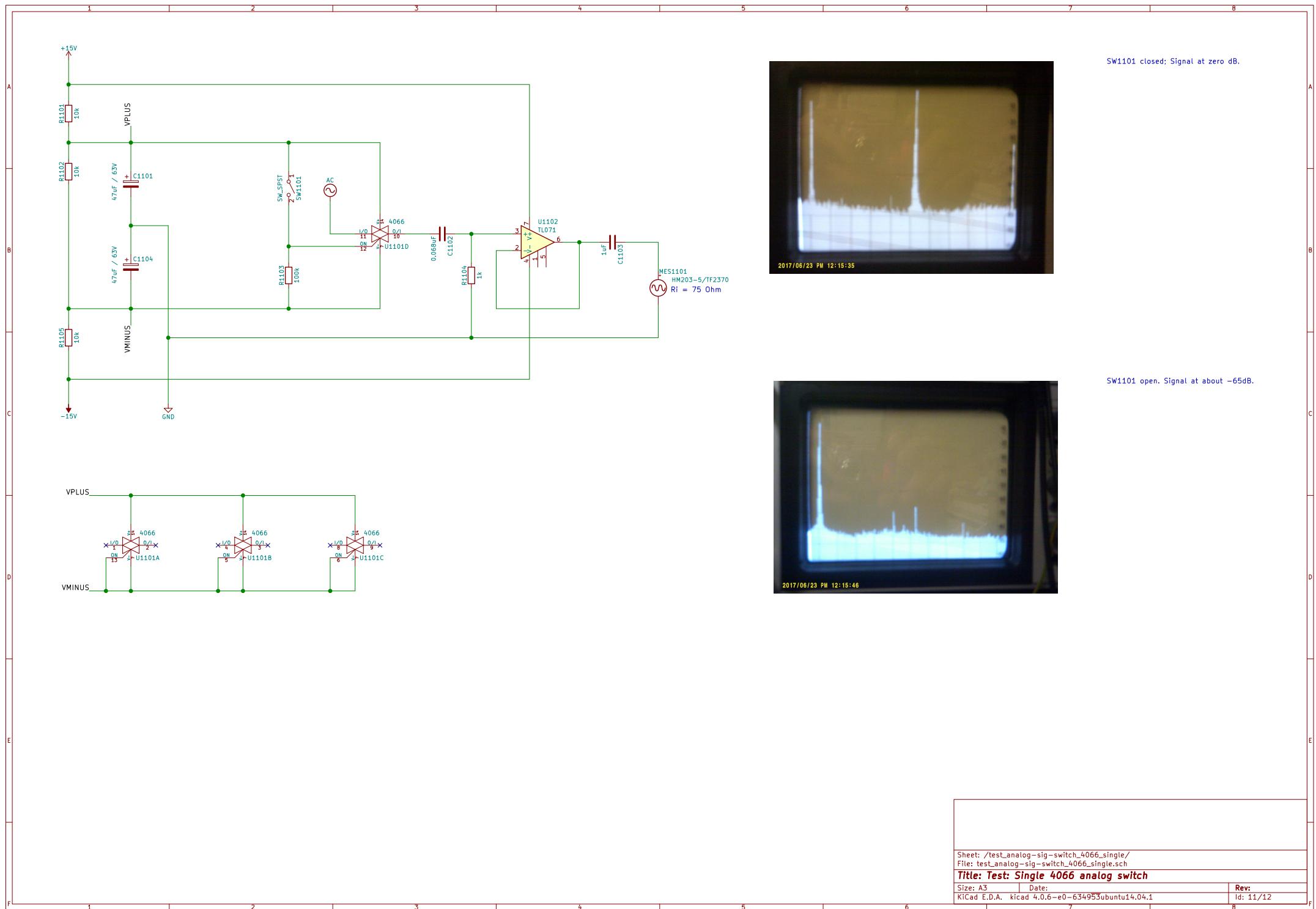


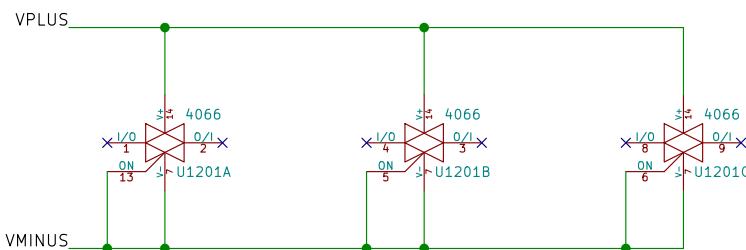
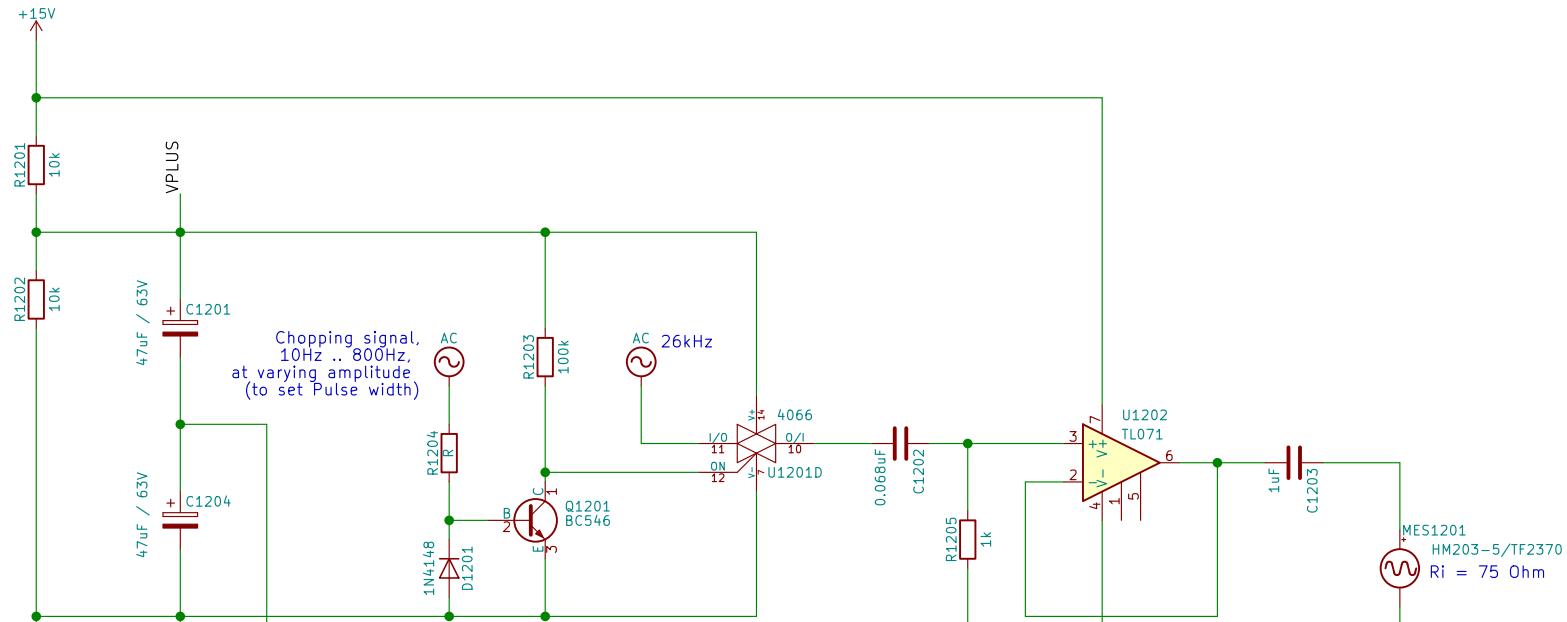
Sheet: /test_analog-sig-switch_4066/
File: test_analog-sig-switch_4066.sch

Title: Analog switch with IC: 4066

Size: A3 | Date: 2017-06-22
KiCad E.D.A. kicad 4.0.6-e0-634953ubuntu14.04.1

Rev: 1
Id: 10/12





Sheet: /test_analog-switch_4066_chopper/
File: test_analog-switch_4066_chopper.sch

Title: Test: Spectrum of 25kHz signal, chopped.

Size: A4 Date:
KiCad E.D.A. kicad 4.0.6-e0-634953ubuntu14.04.1

Rev:
Id: 12/12